**Frame of Reference Activity** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: In this activity, you will watch a simulation of a basketball bouncing. It is your job to determine the standpoint of the basketball player and the observer with NO frame of reference.

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| --- | --- | --- | --- | --- |
|  |  | **Basketball Player** | | |
|  |  | **Standing Still** | **Walking West** | **Walking East** |
| **YOU** | **Standing Still** |  |  |  |
| **Walking West** |  |  |  |
| **Walking East** |  |  |  |

**Observations:**  Use arrows to show what the ball appear to be doing in the following scenarios:

**Analysis Questions:**

1. Why do you think the ball appears to be moving if the basketball player is standing still and "you" are walking east or west?

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1. What is a "frame of reference"?

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1. Why do you think an understanding of frames of reference is important?

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1. Imagine a ball that is dropped from the top of a ladder on a boat floating down a river. If you wanted to study the motion of the ball, from where would you choose to observe it? The top of the ladder? The deck of the boat? The riverbank? Explain your choice.

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